

REMARKS

Claims 1-8, 10, 12-21 and 23-57 were presented for examination. Claims 1, 3, 7, 8, 10, 18, 21, 29, 30, 33, 38, 40, 51, 55 and 56 are currently amended. Claims 9, 11 and 22 were previously canceled without prejudice or disclaimer of subject matter. Claims 5 and 6 are currently canceled without prejudice or disclaimer of subject matter. No new claims have been added. Accordingly, upon entry of this amendment, claims 1-4, 7, 8, 10, 12-21 and 23-57 will be pending.

Claims 1-5, 7, 8, 18-21 and 23-57 were rejected under 35 USC § 102(b) as being anticipated by Takubo (U.S. 6,329,610). Claims 1, 6, 10 and 12-18 were rejected under 35 USC § 102(e) as being anticipated by Asai (U.S. 2005/0039948 A1).

Takubo

Claims 1-5, 7, 8, 18-21 and 23-57 stand rejected under 35 USC 102(b) as being anticipated by Takubo.

Independent claims 1, 18, 21, 29, 30, 33, 38, 40 51 55 and 56 are currently amended, support for which can be found in the drawings and specification as filed, for example, at originally filed claims 5 and 6 and in the specification at paragraphs [0049], [0053] and [0067]. No new matter is added.

Applicants note that Takubo discloses a first via land of a wiring layer on a first surface of a first insulation layer that is a rigid layer and a second via land of a wiring layer on a second surface of a second insulation layer that is a flexible layer being electrically and mechanically connected with a conductive pillar pierced through a third insulation layer disposed between the first insulation layer and the second insulation layer.
(Abstract)

Independent claims 1, 18, 21, 38, 40, 55 and 56 require that **each** of the bridge pads is coaxially arranged with respect to the corresponding first and second blind vias. Independent claims 29, 30, 33 and 51 require that **each** of the interlayer interconnection units have a first blind via coaxially arranged with respect to a corresponding second blind via. While Takubo may disclose one or more coaxial blind vias, some of the blind vias of Takubo are not coaxially arranged (in other words, **each** of the blind vias of Takubo does not have a corresponding second blind via coaxially arranged therewith). For example, in the structure shown in Figure 2 of Takubo, conductive pillar 32 (the second one from the left) in layer 23 does not have a corresponding second blind via coaxial therewith. For this reason, Applicants respectfully submit that independent claims 1, 18, 21, 38, 40, 55 and 56 are neither anticipated nor rendered obvious by the teaching of Takubo.

Independent claims 1, 18, 40, 51, 55 and 56 require that first and second capture pads (corresponding to the first and second blind vias) have a diameter less than a diameter of the bridge pad therebetween. The capture pads of Takubo are neither taught nor fairly suggested as being less than the diameter of the bridge pads therebetween. For this reason, Applicants respectfully submit that independent claims 1, 18, 40, 51, 55 and 56 are neither anticipated nor rendered obvious by the teaching of Takubo.

For the plurality of reasons discussed above with respect to independent claims 1, 18, 21, 29, 30, 33, 38, 40, 51, 55 and 56, Applicants respectfully submit that claims 1-5, 7, 8, 18-21 and 23-57 are neither taught nor rendered obvious by Takubo. Applicants request reconsideration and withdrawal of the rejection of claims 1-5, 7, 8, 18-21 and 23-57 as being anticipated under 35 USC 102(b) by Takubo.

Asai (US 2005/0039948 A1)

Claims 1, 6, 10 and 12-18 stand rejected under 35 USC 102(e) as being anticipated by Asai.

Asai discloses a multi layer printed circuit board having a metal layer sandwiched between two insulating layers. Small non-penetrating openings which reach the metal layer may be formed by applying laser beams to the insulating layers. As discussed below in more detail, Asai does not teach or fairly suggest the case where each pair of small non-penetrating openings is coaxially arranged. Moreover, Asai does not teach or fairly suggest having each of the metal layers between the non-penetrating openings be larger in diameter than the corresponding capture pads. While Asai may disclose one or more coaxial blind vias, some of the blind vias of Asai are not coaxial. Figure 6 of Asai clearly shows this fact.

The amendments to claims 1, 10 and 18 require that each pair of opposed coaxial blind vias are coaxial, not just apparently random blind vias, as shown in Asai.

Moreover, claim 1 has been amended to require that a first and second capture pad have “a diameter less than a diameter of said interstitial bridge pad therebetween.” Claim 18 has been amended to require that “**each** of said corresponding pairs of capture pads have a diameter less than a diameter of a corresponding one of said bridge pads.” Asai clearly does not teach or fairly suggest such a structure. As shown in Figure 6, some of the bridge pads 18 may be the same size as the capture pads 34 of Asai.

For the above reasons, Applicants respectfully submit that claims 1, 6, 10 and 12-18 are neither taught nor rendered obvious by the teachings of Asai. Reconsideration and withdrawal of the rejection of claims 1, 6, 10 and 12-18 as being anticipated under 35 USC 102(e) over Asai is requested.

Conclusion

In light of the arguments and amendments presented herein, the Applicants respectfully submit that all pending claims are in condition for allowance. Accordingly, reconsideration and allowance of this Application is earnestly solicited. Should any

issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

If there are any fees due in connection with the filing of this response, please charge such fees to our Deposit Account No. 17-0026. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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